Type 2 Diabetes Drug Class Comparison

T2DM Drug Class	Mechanism	Route	A1C Lowering*	Hypoglycemia Risk	Weight Effect*	Cost
Biguanides (metformin)	Decreases hepatic production of glucose; increases insulin sensitivity	Oral	●●●	No	Potential for weight loss	$
SGLT2 inhibitors	Increases urinary glucose excretion	Oral	●●	No	Weight loss	$$$^
GLP-1 receptor agonists†	Increases glucose-dependent insulin release; decreases glucagon secretion; slows gastric emptying	SUBQ/ Oral	●●●●	No	Weight loss	$$$$
GIP/GLP-1 receptor agonists (e.g., tirzepatide)	Increases glucose-dependent insulin release; decreases glucagon secretion; slows gastric emptying	SUBQ	●●●●●	No	Weight loss	$$$$
DPP-4 inhibitors	Increases glucose-dependent insulin release; decreases glucagon secretion	Oral	●	No	Neutral	$$$
Thiazolidinediones	Increases insulin sensitivity in muscle, fat, and liver cells; increases glucose entry into cells	Oral	●●	No	+ Weight gain	$‡
Sulfonylureas	Stimulates insulin secretion from pancreatic beta cells	Oral	●●●	Yes	+ Weight gain	$
Insulin analogs	Stimulates peripheral glucose uptake by skeletal muscle and fat tissue; inhibits hepatic glucose production	SUBQ	●●●●● Titrate to response	Yes	+++ Weight gain	$$$
Human insulins	Stimulates peripheral glucose uptake by skeletal muscle and fat tissue; inhibits hepatic glucose production	SUBQ/ Inhaled	●●●●● Titrate to response	Yes	+++ Weight gain	$ SUBQ $$$$$ Inhaled

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*The extent of A1C lowering and weight change is highly variable based on factors including baseline A1C and weight, patient-specific characteristics, lifestyle modifications, and the number of drugs in the regimen.

^Bexagliflozin generally has lower cost than other SGLT2 inhibitors.

†The GLP-1 receptor agonists dulaglutide and subcutaneous semaglutide have notably greater A1C-lowering efficacy and weight loss effects than other GLP-1 receptor agonists.

‡Pioglitazone is generic and is low cost; however, rosiglitazone (Avandia®), which is currently unavailable in the U.S., was not available as a generic.

References available at pyrls.com

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